



**POSTER PRESENTATION**

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# High signal intensity on T2 weighted cardiac magnetic resonance imaging in hypertrophic cardiomyopathy: Is it a marker of myocardial injury?

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## Background

Previous studies observed the phenomenon of high signal intensity on T2-weighted image of cardiac magnetic resonance imaging (CMR) in hypertrophic cardiomyopathy (HCM). However, the underlying histopathologic mechanism is unclear. Elevated cardiac troponin can be detected in some HCM patients. A reasonable hypothesis is that myocardial T2-high signals is a potential marker of myocardial injury in HCM. We sought to investigate the association between cardiac troponin and the extent of T2-high signals in HCM patients.

## Methods

Forty-four HCM patients underwent 3.0T CMR scanning. On T2-weighted images, the number of segments with high-signal intensity (myocardium to skeletal muscle signal intensity ratio > 2) and the percentage of high-signal area (> 2 SD above remote tissue) were measured in 16 myocardial segments along the LV mid-myocardial circumference on 3 short-axis images. The level of high sensitivity cardiac troponin T (hs-cTnT) was also assessed.

## Results

Myocardial T2-high signals were identified in 33 (75%) patients and 144 (20.5%) segments. Elevated hs-cTnT was observed in 28 (63.6%) patients. Cochran-Armitage test showed a statistically significant trend of increasing level of hs-cTnT with elevating number of segments with myocardial T2-high signal ( $p=0.002$ ). Then, Pearson's test showed the percentage of myocardium with T2-high

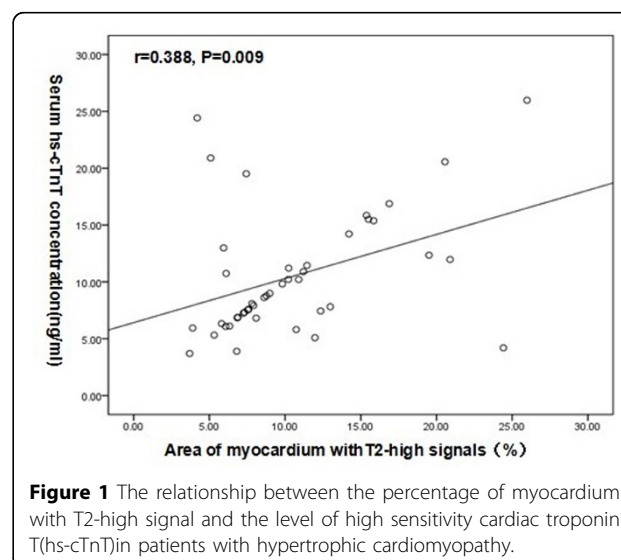
signal significantly associated with the hs-cTnT level ( $r=0.388, P=0.009$ ).

## Conclusions

Myocardial T2-high signals can be considered as a marker of myocardial injury in HCM patients.

## Authors' details

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**Figure 1** The relationship between the percentage of myocardium with T2-high signal and the level of high sensitivity cardiac troponin T (hs-cTnT) in patients with hypertrophic cardiomyopathy.

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**Table 1 Cardiac magnetic resonance characteristics of patients with HCM**

	Study participants (n=44)
LVEDV,(ml)	136.1±31.7
LVESV,(ml)	49.1±15.0
LVEF,(%)	62.7±12.0
LV mass,(g)	155.2±54.5
LV mass index,(g/m <sup>2</sup> )	94.2±34.8
Segments with T2-high signal, n(%)	144(20.5)
Presence of T2-high signal, (%)	10.5±5.4

LVEDV, left ventricular end diastolic volume; LVESV, left ventricular end systolic volume; LVEF, left ventricular ejection fraction; LV left ventricle

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